

## RHIZOMARIA PICEAE HARTIG NEW TO AMERICA

(Homoptera: Aphidae)

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Because the species discussed herewith has been placed in almost as many genera as times it has been mentioned in aphid literature the generic name first used with it is retained in this brief note.

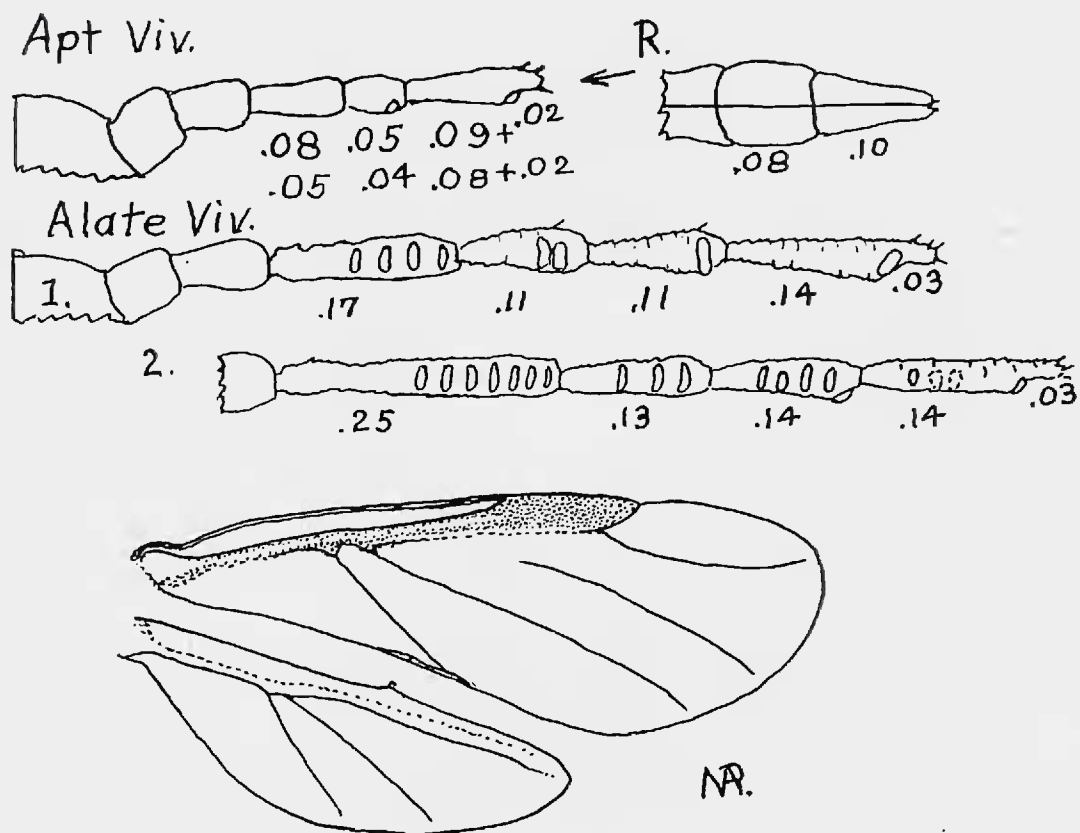
In 1953 while weeding under a blue spruce tree, my hoe brought up a small rootlet surrounded by a mass of flocculent matter. I could not associate this material with aphids although I suspected them, nor could I identify the root, or locate more flocculent matter. In June of 1959 I bought several small trees of *Picea pungens* from a local nursery, they in turn having purchased them from a nursery in Delta, Colorado where the plants had been grown from seed. The trees were in gallon cans. Upon removing the trees from the cans I at once noted the same flocculent matter I had seen in 1953 and was able to associate it with aphids. From this material I have been able to rear many apterous viviparous females and two alate specimens. The two alate specimens differ from each other and may not belong to the same species.

I could not associate the specimens with species known to me, or identify them from descriptions in the literature. Material was sent D. Hille Ris Lambers who determined it as the species described by Hartig in 1857 as *Rhizomaria piceae*. A search of the literature was then made. Baker (1920) placed *Rhizomaria* as a synonym of *Pemphigus* Hartig. Only one reference to *piceae* under this genus was found, and this species does not appear to belong to this genus because of the rather large wax glands on the thorax of the alata and the apparent absence of cornicles in this form. Use of Baker's keys fails to place this species in *Pemphigus* but more nearly in the genus *Prociphilus* Koch.

I strongly suspect that we need further information concerning this species before we can correctly place it generically and for this reason treat it in the genus proposed for it by Hartig.

The genus *Rhizomaria* was proposed by Hartig in 1857, not 1856 as reported by Börner (1952), for the species *piceae* described at the same time. Hartig's description of the genus is very brief, and is based upon the structure of the sensoria. His description of *piceae* is not good, and is in error in his reference

to "two staff-shaped honey tubes" on the males which he did not have. Tullgren (1909) placed *piceae* in the genus *Pemphigus* and cited a paper I have not seen by Jacobi (1905) who placed it in *Rhizomaria*. Theobald (1929) provisionally placed *piceae* in the genus *Pachypappella* Baker. Börner (1932) placed *piceae* in the genus *Pachypappa* Koch and looked upon it as a synonym of *Pachypappa vesicallis* Koch. Börner (1952) and Börner and Heinze (1957) did likewise. Baker (1920) placed *Pachypappa* as a synonym of *Pemphigus*.



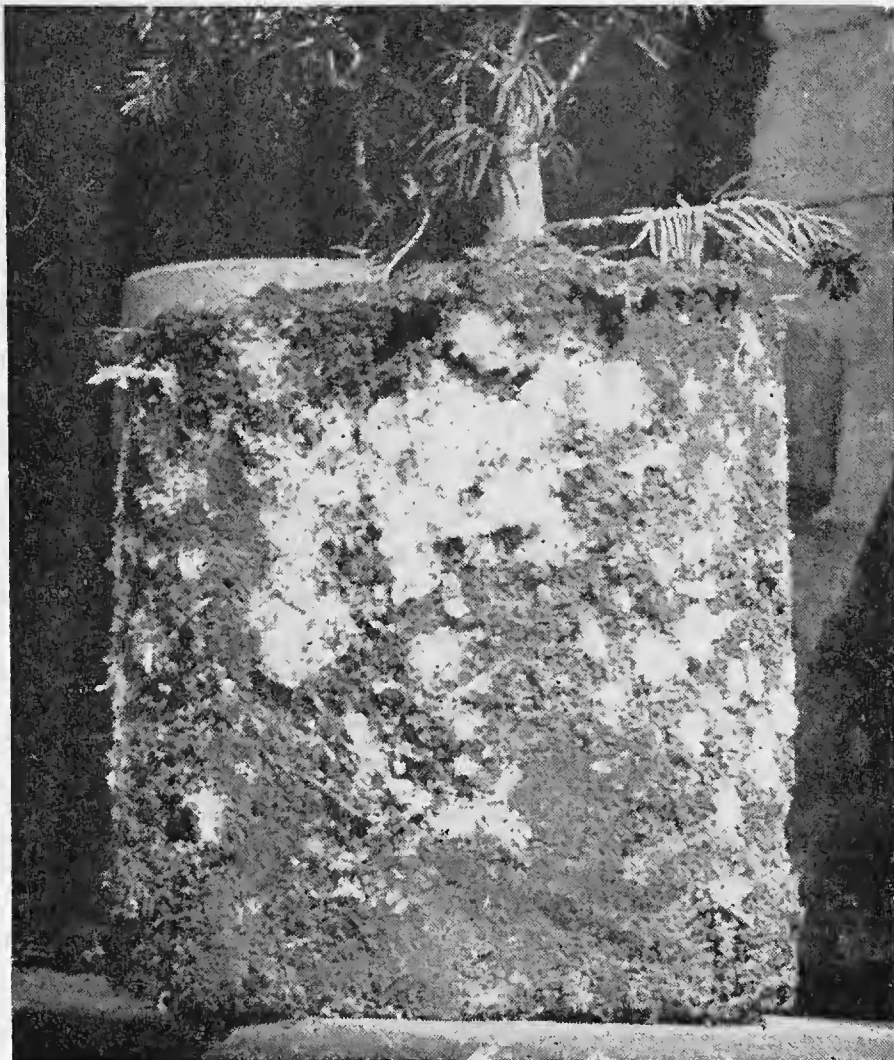
#### EXPLANATION OF FIGURES

*Rhizomaria piceae* Hartig: apterous viviparous female, antenna and rostrum; viviparous female, antenna forms, wings.

The apterous forms of this species are extremely small and pale in color except for two dusky areas on the head separated by a clear median line. Cornicles have not been noted. Apterous specimens produce an abundance of flocculent material far in excess of that which would be expected from their numbers. This material arises from the posterior region of the dorsum of the abdomen and takes the form of flat ribbon-like material which extends some distance beyond the abdomen. It is white and at times bluish. Specimens taken in December had a distinctly

different secretion from those taken in the summer. The secretion was not at all flocculent, nor ribbon-like but rather thread-like and surrounded the specimens much like a cocoon.

It was decided not to plant the trees but rather to use them for rearing additional specimens. Several methods were tried for rearing, which permitted frequent observation with a minimum amount of disturbance to the roots. It was found that the aphids



#### EXPLANATION OF FIGURE

*Rhizomaria piceae* Hartig: flocculent material on roots of *Picea pungens*.

did not tolerate a soil which retained water. Therefore adequate drainage had to be provided and care used in the application of water. The method of rearing which gave best results was as follows. The trees were removed from the cans and the sides of the root mass covered with a band of aluminum foil. The bottom of the soil mass was left uncovered. The tree was then planted in peat moss in a large clay pot. To observe the aphids one had only to remove the tree from the pot and unwind the aluminum band.



Aphids on trees planted directly in peat moss did not follow the roots into the moss, the moss first having to be removed, a process which took time, when the aphids were observed.

The paper in which Hartig published his descriptions appears to be extremely difficult to locate. It is interesting to note that this paper is not listed in Index Litteraturae Entomologicae by Horn and Schenkling. Perhaps this is due to the fact that Hartig's paper is without a title and in the form of a letter which begins "My esteemed Friend," and ends "Your devoted friend, Theodor Hartig."

#### LITERATURE CITED

- BAKER, T. C.  
1920. Generic Classification of the Hemipterous Family Aphididae. U. S. Dept. Agric., Bull. 826:71, 76-77.
- BORNER, CARL  
1932. Handbuch der Pflanzenkrankheiten Vol. 1:647-648.  
1952. Europae centralis Aphides. Kurt Branco Weimar. :190-191.
- BORNER, CARL AND CURT HEINZE  
1957. Handbuch der Pflanzenkrankheiten Vol. V:297.
- HARTIG, THEODOR  
1857. Without title (in the form of a letter). Transactions of the Hils-Solling Forestry Association, Published by the Association Vol. 1856 Commissioned to C. C. Müllers Book Firm 1857:52-57.
- JACOBI, A.  
1905. Die Fichtenwurzellaus (*Rhizomaria piceae*) Tharander Forstliches Jarbuch. 55 H. 3, :177-197 (Not seen).
- THEOBALD, FRED V.  
1929. The Plant Lice or Aphididae of Great Britain Vol. III Headley Brothers, London :241-243.
- TULLGREN, A.  
1909. Aphidologische Studien I Arkiv für Zoologi, 5 (14):138-142.

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#### NOTES ON THE OCCURRENCE OF FOUR ADVENTIVE EARWIGS IN ARIZONA

(Dermaptera)<sup>1</sup>

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Schlinger *et al.* (1959) have recently reported on the firm establishment of the predaceous earwig, *Labidura riparia* (Pallas), in agricultural desert valleys of southern California. Since this insect had previously been known from Florida irregularly westward only into Texas, it seems pertinent to document its occur-

<sup>1</sup> Arizona Agricultural Experiment Station Technical Paper No. 539.